REMARKS

Claims 1-30 remain in this application. Claims 1, 8 and 22 have been amended, and these amendments have support in the specification at paragraphs 28 and 29.

I. §112 Rejection

Claim 8 has been amended to address the 35 U.S.C. §112 issue raised by the Examiner in the Official Action. In particular, the dependency of claim 8 has been amended to specify that this claim depends from claim 20, which provides an auger as part of the claimed drag box. Accordingly, it is submitted that claim 8 is complete and in full compliance with 35 U.S.C. §112, second paragraph.

II. § 102 and 103 Rejections

A. Pending Claims are Not Anticipated or Obvious in View of Sehr.

Claims 1-2, 5-7, 11 and 12 are not anticipated by U.S. Patent No. 5,258,961 to Sehr et al. (Sehr). Sehr does not disclose or suggest a drag box comprised of a distribution device and a shearing device, as claimed in claim 1. Screed 4 of Sehr cannot be considered Applicant's claimed shearing device. Screeds function in an entirely different manner from shearing devices. As discussed in the background section of the present application, screeds tend to grab and pull viscous mix as it is being applied. In contrast, as discussed in paragraph 26 of the present application, a shearing device, such as a blade, is capable of shearing asphalt mixtures including extremely viscous mixtures, such as cold mix.

Still further, the control unit of Sehr does not teach or suggest Applicant's claimed proximity control device. Sehr does not disclose or suggest a proximity control device for directly raising and lowering a shearing device in response to elevational changes in a surface, as claimed by Applicant in claim 1. Instead, the control signal of Sehr serves to adjust the height of tie point 6 of tie arm 5 on road finishing machine 1. See column 4, lines 9-12, of Sehr. By this

height adjustment, the inclination angle of screed 4 is varied. See column 2, lines 53-59. By adjusting the screed through a tow point rather than directly raising and lowering it, there is a lag time between when the tow point is adjusted and the angle of inclination of the screed is actually changed. Further, the screed is not actually raised or lowered, but instead, its angle of inclination is varied by adjusting the height of rear edge 9 of screed 4. Accordingly, because Sehr teaches adjustment at its tow point rather than direct adjustment, Sehr does not disclose or suggest directly raising or lowering a shearing device substantially instantaneously as surface elevation changes, as claimed by Applicant in claim 1.

For the foregoing reasons, claim 1 is not anticipated or made obvious by Sehr. Further, claims 2-21 depend from claim 1 and thus are not anticipated or made obvious by Sehr for the same reasons that claim 1 is not anticipated or made obvious.

1. Claims 9 and 10 are not obvious over Sehr in view of Kieranen.

As discussed previously, Sehr does not disclose a shearing device, as claimed by Applicant in claim 1. More specifically, Sehr does not disclose or suggest a strike blade, as claimed in claims 9 and 10. Further, Sehr does not disclose or suggest a blade that is concave with respect to the direction of travel, as claimed in claim 10.

U.S. Patent No. 6,227,761 to Kieranen et al. (Kieranen) is cited for disclosing the deficiencies of Sehr. However, contouring assembly 28 of Kieranen cannot be considered to teach or suggest Applicant's claimed shearing device. Contouring assembly 28 preferably includes one or more of a plow 32, a screed 34 and an auger 36. Plow 32 of Kieranen cannot be considered to disclose or suggest Applicant's claimed strike blade. Applicant's claimed strike blade is for further distributing an asphalt mixture over a surface after it has been initially distributed by a distribution device, such as an auger. In contrast, plow 32 of Kieranen is positioned on a leading side 41 of contouring assembly 28 and serves to push excess concrete

away from auger 36 and vibrating screed 34. Kieranen is using its screed 34, not its plow 32, to smoothen an asphalt mixture after it has been distributed by auger 36. In contrast, as discussed above, Applicant's claimed drag box requires a shearing device for **further** distributing the asphalt mixture after it has been initially distributed by a distribution device, such as an auger. Accordingly, a *prima facie* case of obviousness for rejecting pending claims 9-10 has not been established. Kieranen fails to supply the claim elements not supplied by Sehr.

2. Claim 19 is not obvious over Sehr in view of Paetzold.

Sehr does not disclose or suggest using a pugmill as a distribution device, as claimed by Applicant in claim 19. U.S. Patent No. 6,036,353 to Paetzold (Paetzold) is cited for teaching the deficiencies of Sehr. While Paetzold identifies its chassis-mounted mixing plant as a pugmill, Paetzold does not teach or suggest how its device distributes an asphalt mixture over a surface once it exits the mixing plant. Instead, the focus of Paetzold is to provide apparatus for making an asphalt mixture on a chassis. This apparatus is able to continuously meter and adjust the flow of aggregate and maintain the proper ratio of additives so as to have a continuous flow, blending and mixing plant on a vehicle.

The pugmill of Paetzold is not part of a **drag box** but rather rides on transport wheels 14 and a vehicle frame 12. Accordingly, there is no suggestion or motivation to combine the pugmill of Paetzold with the road finishing machine of Sehr. Further, there is no reasonable expectation of success that a Paetzold's pugmill, which Paetzold teaches must be supported by a chassis with wheels, could be pulled, as Applicant's claimed drag box is pulled, against the surface being paved. Accordingly, Applicant respectfully submits that a *prima facie* case of obviousness for rejecting pending claim 19 has not been established.

B. Pending Claims are Not Obvious Over Horner in View of Middleton.

A *prima facie* case of obviousness for rejecting claims 1-7, 9, 11-15, 20, and 22-30 has not been established. These claims are not anticipated or made obvious by U.S. Patent No. 6,554,080 to Horner (Horner) in view of U.S. Patent No. 4,924,374 to Middleton et al. (Middleton).

Horner does not disclose or suggest a drag box that includes a distribution device **and** a shearing device, as claimed by Applicant in independent claims 1 and 22. Hopper 36 of Horner is not part of a drag box. Instead, it is supported by a set of ground engaging wheels 40. Still further, while discharge outlet 70 of hopper 36 allows material to be discharged therethrough, hopper 36 does not include any type of device for distributing an asphalt mixture over a surface. Hopper 36 does not disclose or suggest the distribution device claimed by Applicant in claims 1 and 22.

Still further, moldboard 28 of Horner cannot be considered to teach or suggest an asphalt mixture distribution device. In fact, moldboard 28 is attached to drawbar 26 on one end and screed 38 on the other end and does not even have direct contact with an asphalt mixture. Moldboard 28 in no way can be said to be acting to distribute paving material. Accordingly, moldboard 28 does not disclose or suggest the distribution device claimed by Applicant in claims 1 and 22.

Screed 38 is the first piece of apparatus disclosed by Horner that interacts with an asphalt mixture so as to spread it. However, screed 38 cannot be considered to disclose or suggest Applicant's claimed shearing device. As discussed above with respect to Sehr, Applicant's claimed shearing device has a limited surface area so as to be able to distribute and level an asphalt mixture through a shearing motion, as claimed in claims 1 and 22, rather than grabbing and pulling a viscous mix, as is done by a screed.

Cylinders 30 and 32 of Horner cannot be considered to disclose or suggest Applicant's claimed proximity control device. Horner's cylinders 30 and 32 act so as to change the left-to-right tilt of moldboard 28. They do not act to raise and lower screed 38. As show in Fig. 1 and Fig. 2 of Horner, cylinders 30 and 32 are connected to draw bar 26, which then is connected to moldboard 28 and moldboard 28 is then connected to screed 38. Cylinders 30 and 32 do not act as a proximity control device for directly raising and lowering a shearing device in response to elevational changes in a surface, as claimed in claims 1 and 22, but instead act to merely change the left-to-right tilt of moldboard 28, causing the tilt of screed 38 to change. Still further, as admitted in the Office Action, Horner does not disclose the use of a distance measuring device associated with a proximity control device for raising and lowering the shearing device in response to elevational changes in the surface, as claimed in claims 1 and 23.

Middleton is cited for teaching a device that is able to produce repeated signals indicative of the elevation of a ground surface. However, follower 10 of Middleton is not associated with a proximity control device for raising and lowering a shearing device in response to elevational changes in a surface, as claimed by Applicant in claims 1 and 23. Instead, as taught in column 5, lines 43-48 of Middleton, each follower 10 is connected to a control box 80 which is preferably mounted in a cab 90 for viewing and operation by an operator. As further pointed out in column 7, lines 5-7, of Middleton, "the operator may send **manual** commands to offset the blade 40 to a different height." (Emphasis added). Accordingly, Middleton does not teach or suggest a proximity control device associated with its device for measuring elevation of a ground surface.

In addition, Middleton fails to disclose or suggest a drag box that includes a distribution device **and** a shearing device. Nothing in Middleton can be construed as an initial distribution device for distributing an asphalt mixture. Further, blade 40 of Middleton is not part of a drag

box but rather is mounted on a frame 20 carried by an earth grader 30 and is supported by wheels in front and in back of blade 40.

The combination of Horner and Middleton does not disclose or suggest a drag box that includes a device for distributing an asphalt mixture over a surface and a shearing device for further distributing the asphalt mixture, as claimed in claims 1 and 22. Further, the combination of Horner and Middleton does not disclose a proximity control device for directly raising and lowering a shearing device in response to elevational changes in a surface, as claimed in claims 1 and 22. As discussed above, cylinders 30 and 32 of Horner do not raise and lower Horner's screed 38 but instead merely change the tilt of this device. Further, Middleton does not provide a device for raising and lowering a shearing device in response to elevational changes in a surface but instead suggests that such movement should be accomplished manually by an operator. Further, the combination of Horner and Middleton does not suggest a signal generator and a signal receiver associated with a proximity control device. There is no motivation from the cited references to combine Middleton's elevation measuring device with Horner's cylinders for adjusting tilt, as tilt would not be adjusted in response to elevation but so as to create a crown on a road. (See column 7, lines 55-67, of Horner). Further, even if these references were combined, as discussed above, Applicant's claimed invention would not be disclosed or suggested. For the foregoing reasons, Applicant respectfully submits that a *prima facie* case of obviousness for rejecting pending claims 1 and 22 has not been established.

Claims 2-21 and 23-30 are not obvious over Horner in view of Middleton for the same reasons that claims 1 and 22 are not obvious in view of these references. Still further, the combination of Horner and Middleton does not disclose or suggest confinement ends coupled with an **initial** distribution device, as claimed by Applicant in claim 3. The combination of Horner and Middleton also does not disclose or suggest confinement ends that include skis, as

claimed by Applicant in claim 4. Upright shields 192 and 194 of Horner are only associated with screed 38 and do not confine the material as it is dispensed from hopper 36.

The combination of Horner and Middleton does not teach or suggest signal generators that are coupled with confinement ends, as claimed by Applicant in claim 13. The combination of Horner and Middleton does not teach or suggest a receiver that sends a signal to control the height and slope of a shearing device, as claimed by Applicant in claim 14. The combination of Horner and Middleton does not teach or suggest a shearing device that is able to be extended in a direction that is substantially perpendicular to the direction of travel of the drag box, as claimed by Applicant in claim 15. Still further, the combination of Horner and Middleton does not disclose or suggest a distribution device comprised of at least one auger, as claimed by Applicant in claim 20. The rotor 82 disclosed by Horner is within its hopper 36 and is not in contact with the ground so as to be part of a drag box and to distribute an asphalt mixture over a surface, as done by the auger claimed in claim 20.

The combination of Horner and Middleton does not disclose or suggest leveling a substantially diluent-free asphalt mixture with a shearing device, as claimed by Applicant in claim 25. In addition, the combination of Horner and Middleton does not disclose or suggest stopping a drag box from moving in a direction of travel and moving a drag box in a direction of travel, wherein substantially planar movement of the shearing device is maintained during the stopping and moving steps, as claimed by Applicant in claim 29.

C. Pending Claims are not Obvious of Banks in view of Ferguson.

Claims 1-8, 15, 18, 20, and 21 are not disclosed or suggested by U.S. Patent No. 6,079,901 to Banks et al. (Banks) in view U.S. Patent No. 5,201,604 to Ferguson et al. (Ferguson). Banks does not disclose or suggest a drag box that includes a device for distributing an asphalt mixture over a surface **and** a shearing device for further distributing the asphalt

mixture. Instead, Banks discloses spreading augers 34 and a variable width screed 36. Banks' screed 36 cannot be considered to disclose or suggest Applicant's claimed shearing device for the same reasons that Sehr's screed and Horner's screed do not suggest it. Further, as admitted in the Office Action, Banks does not disclose the use of a distance measuring device able to raise and lower a shearing device in response to elevational changes in a surface, as claimed by Applicant in claim 1.

Ferguson is cited to disclose a sonic grade control assembly. However, the control assembly disclosed by Ferguson does not include a proximity control device for directly raising and lowering a shearing device in response to elevational changes in a surface, as claimed by Applicant in claim 1. Instead, cylinder 19 of Ferguson acts to move screed positioning member 18, which is connected to screed 17. Cylinder 19 of Ferguson does not **directly** raise or lower screed 17 but instead indirectly moves screed 17 via a tow point. Please note that cylinder 19 of Ferguson merely moves the level of screed 17 by changing the angle of attack of the screed. See column 12, lines 51-67 of Ferguson and column 2, lines 53-59 of Sehr. It appears that an unnumbered wheel shown in Fig. 1 must be used to directly raise or lower screed 17 manually. For the foregoing reasons, Ferguson does not provide the missing limitation of a proximity control device for directly raising and lowering a shearing device in response to elevational changes in a surface, as claimed in claim 1.

Accordingly, the combination of Banks and Ferguson does not teach or suggest a shearing device for further distributing an asphalt mixture over a surface, as claimed by Applicant in claim 1. Still further, the combination of Banks and Ferguson does not disclose or suggest a proximity control device for raising and lowering a shearing device in response to elevational changes in a surface so that the shearing device is raised and lowered substantially instantaneously as the surface elevation changes, as claimed by Applicant in claim 1.

For the foregoing reasons, Applicant respectfully submits that a *prima facie* case of obviousness for rejecting pending claims 1-8, 15, 18, 20 and 21 has not been established. Further, claims 2-21, which depend from independent claim 1, are not anticipated or made obvious by the combination of Banks and Ferguson for the same reasons that claim 1 is not anticipated or made obvious.

1. Claims 16 and 17 are not obvious over Banks in view of Ferguson and further in view of Richter.

For the reasons discussed above, claims 16 and 17 are not disclosed or suggested by the combination of Banks and Ferguson. Still further, as admitted in the Office Action, the combination of Banks and Ferguson, fails to disclose a drag box that is able to distribute and shear asphalt mixtures that have particular thicknesses, as claimed by Applicant in claim 16 and 17.

U.S. Patent No. 6,033,147 to Richter (Richter) is cited for teaching that asphalt paved roadways may include multiple layers of varying thicknesses. However, Richter fails to teach that a drag box distributes and shears his asphaltic surfacing so as to form a pavement of his specified thickness.

Applicant does not dispute that the pavement of the thicknesses described in claims 16 and 17 exist. What Applicant disputes is that it is obvious to use the drag box of claim 1 to distribute and shear asphalt mixtures that are the thicknesses specified in claims 16 and 17.

Further, Richter discloses and suggests a two-layer asphaltic surfacing. Richter is not properly combinable with Banks or Ferguson, as both of these references suggest only one layer of asphaltic surfacing. There is no motivation to combine the total pavement thickness of two layers of asphaltic surfacing with references that disclose a paving machine for making a single layer of asphaltic surfacing.

Because the combination of Banks, Ferguson, and Richter fails to teach or suggest all of the limitations of claims 16 and 17 and because there is no motivation to combine Richter with Banks and Ferguson, Applicant respectfully submits that a *prima facie* case of obviousness for rejecting pending claims 16 and 17 has not been established.

III. Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that the claims are now in condition for allowance and eventual issuance. Such action is respectfully requested. Should the Examiner have any further questions or comments which need be addressed in order to obtain allowance, please contact the undersigned attorney at the number listed below.

Acknowledgement of receipt is respectfully requested.

Respectfully submitted,

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